Welcome to Job Safety Analysis

Facility Information

- Facility Description
- Emergency Exits
- Bathroom Locations
- Breaks, Lunch & the Important Stuff

Agenda

- Introduction of Instructor and Students
- OSHA / MOSH
- Job Safety Analysis
  - What
  - Why
  - How

Biography

- Tom Thorsen
- Maryland Occupational Safety and Health
- 17 Years
- Safety Compliance Specialist
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Introductions

- Name
- Company Name
- Job Title
- What you would like to get from the class

Who Is OSHA?

- Occupational Safety and Health Administration
- Created by Congress with the OSH Act, which was signed by President Richard M. Nixon on December 29,1970
- Oversee worker safety and Health regulations

Who is MOSH?

- Maryland Occupational Safety and Health, 1973
- MOSH falls under the Department of Labor, Licensing and Regulation.
- Division of Labor and Industry created in 1971
- Responsible for worker safety in both Private and Public
- What OSHA refers to as a State Plan State.

What does OSHA/MOSH do?

- Encourages employers and employees to reduce workplace hazards and implement new or improved existing safety and health programs.
- Develops and enforces mandatory job safety and health standards.
- Maintains a reporting and recordkeeping system to monitor job-related injuries and illnesses.
- Provides assistance, training and other support programs to help employers and workers.

Who is covered by the OSH Act?

- All employees and their employers under the Federal Government authority.
- State and Local government employees are excluded from Federal Coverage. *(They are covered in Maryland)*
- Coverage provided either directly by Federal OSHA or through an OSHA approved state program
- Does not cover self-employed
- States with OSHA approved programs must set standards at least as effective as the federal standards.

Is there a need for OSHA?

- Since the agency was created in 1971, occupational deaths have been cut by 62% and injuries have declined by 42%.

Each Year…

- *About 6000 deaths from workplace injuries.*
- *An estimated 50,000 deaths from illnesses caused by workplace exposures.*
- *6 million non-fatal workplace injuries*
- *Injuries alone cost U.S. businesses more than $125 billion.*

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JOB SAFETY ANALYSIS

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Job Hazard Analysis Overview

- What is a Job Safety/Hazard Analysis (JSA/JHA/AHA [EM)?
- Why is a JSA important?
- How to conduct a JSA
  - ❑Determine what tasks need a JSA
  - ❑List the steps of the task
  - ❑Describe the hazards in each step
  - ❑Develop preventive measures
- Improving the JSA process

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What is a Job Safety Analysis?

- A job safety analysis is a technique that focuses on job tasks as a way to identify hazards before they occur.
- It focuses on the relationship between the worker, the task, the tools, and the work environment.
- After uncontrolled hazards are identified, take action to eliminate them or reduce risk.

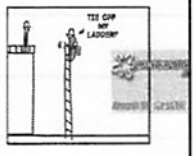
What is a Job Safety Analysis?

- Performing a job safety analysis is one of the best methods to develop safe work procedures for the equipment that is operated.
- The JSA can also be used to train employees in the hazards associated with task and what control measures should be practiced.

Why Perform a JSA?

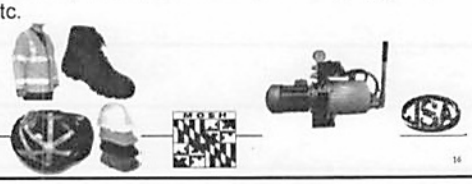
- To be proactive (not reactive)
- Prevent Injury / Illness
- Prevent damage to equipment
- Prevent downtime
- Prevent negative impacts to the "Bottom Line"

DON'T LOOK AT ME LIKE THAT! YOU KNEW THE HAZARDS OF THIS JOB BEFORE YOU STARTED!
WHAT WAS THE FIRST THING ON YOUR JOB SAFETY ANALYSIS?!



Why continued…

- Helps identify PPE requirements
  - Hearing, eye, hand, foot, head protection, body protection, respiratory, material handling aids, etc.
- Helps identify sources of energy
  - Thermal, electrical, hydraulic, pneumatic energy, chemical, kinetic, mechanical, centrifugal, gravity etc.



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Why continued…

- Gets workers involved in the safety process
- Improves communication between management and the workers
- Ask the question to the workers who will be performing the task " Will this method be safe, can the task be performed"?
- They may provide feedback "That won't work because…", Ask "What will"?

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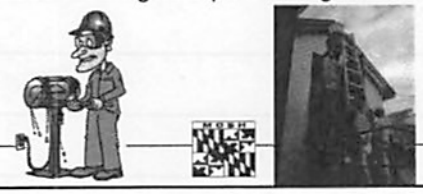
Examples of not having a JHA

- General Industry- Struck-by- Bench grinder not having the tool rest/tongue adjusted properly and an incident occurred causing serious injury to a worker.
- Construction-Fall from elevation-Fall from a ladder working near perimeter guardrail.



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Job Safety Analysis Video

- **Step by Step**

THREE STEP JSA PROCEDURE

- Identify each major step of the job task
- List the hazard(s) to each major step
- Determine the control(s) that would prevent an accident for each hazard identified

IMPORTANT TIPS

- Evaluate all aspects of the job task, even if performed infrequently
- Observe more than one employee doing a specific job task
- Observe more than one shift
- Take enough time observing the job
- Observe a worker actually doing the job, not just describing job

Benefits of a JSA

- Hazard identification
- Employee input into the hazard control
- Updated procedures
- Better communication between all workers
- Less effect on bottom line

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Benefits of JSA

- Establishes good communication- supervisor-employee
- Reduces prep time for training employees
- Increases productivity due to safer workplace
- Results in fewer injuries
- Standardizes work procedures
- Serves as performance measurement tool
- Identify problem before implementation of changes rather than after

What tasks need a JSA?

- Review all the jobs in the workplace and make a list of those jobs that might require a JSA
  - Look for hazardous conditions and unsafe behaviors
  - Review Incidents/Accident History
  - Prioritize Jobs- Worst First

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Where do I look for hazards?

- Safety Data Sheets (SDS)
- Experienced workers
- Accident and incident reports
- First Aid statistical records
- Safety committee meeting minutes
- Safety inspection reports
- Previous JSAs
- Existing work procedures
- Equipment manuals
- Preventive/corrective maintenance records

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Behaviors to look for:

- Working at elevations
- Lifting, lowering, pushing, pulling and other manual handling tasks
- Other workers/public above or below the work area
- Use of cranes, lifts, or other motorized equipment
- Working near energized equipment/components
- Working alone or in isolated areas
- Confined space or temperature extremes

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Factors that may Increase the inherent risk of the task:

- Number of employees
- Number of hazards in the procedure
- Number of opportunities for unsafe behaviors
- Frequency
- Duration
- Proximity
- Complexity
- Potential for severity
- Unreasonable workload
- Working under distress

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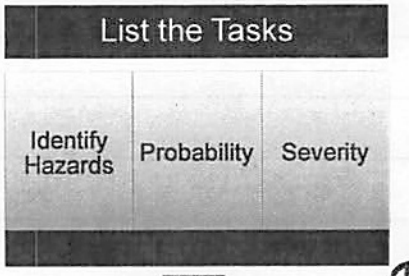
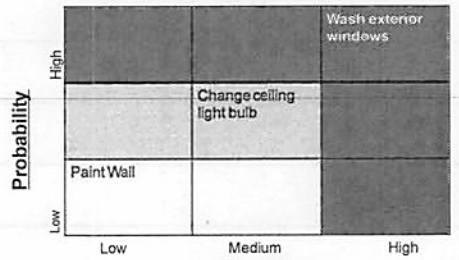
Review of Incident/Accident History



The Injury Pyramid

Severity

Risk Assessment Matrix



Severity

Probability-for Injury or Illness

Criteria	Rating
Exposure to danger zone	10
50/50 chance	6
Unusual sequence or coincidence	3
Remotely possible	1
Practically impossible	1

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Severity- Most Likely Consequence

Criteria		Rating
Catastrophe- Fatality # of workers	>	10
Single Fatality		10
Lost Time to multiple workers	>	5
Lost Time		5
Non-Lost Time		1
Minor/First Aid		1

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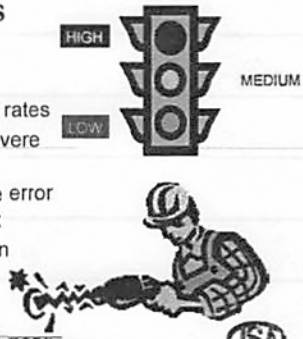
Prioritize Jobs

- Worst Is First
  - Highest Injury Illness rates
  - Potential to cause severe injury/illness
  - Tasks that one single error could lead to incident
  - New to your operation
  - Complex



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Identify Hazards

- What can go wrong?
- What are the consequences?
- How could the hazard arise?
- What are the contributing factors?
- How likely is the hazard to occur?

Example:

Metal shop, clearing a "snag", worker's hand comes in contact with rotating pulley

- What can go wrong?
- What are the consequences?
- How could the hazard arise?
- What are the contributing factors?
- How likely is it that the hazard will occur?

Potential Hazards

- Striking against/struck by
- Caught in, by or between
- Slip, trip
- Fall from one level or same level
- Pushing, pulling, lifting, lowering, bending or twisting
- Environment
- Toxic gas, vapor, fumes, or dust
- Heat, cold, noise or ionizing radiation
- Flammable, explosive or electrical hazards

Develop Preventive Measures

- Elimination
- Substitution
- Engineering Controls
- Administrative Controls
- Personal Protective Equipment

Elimination and Substitution

- May be difficult to implement
- If in design stage substitution may be less expensive
- If not major changes in equipment or procedures

Engineering Controls

- Elimination/reducing the hazard, substituting the processes, equipment, materials or other factors
- Enclose the hazard
- Isolate the hazard
- Remove or re-direct the hazard

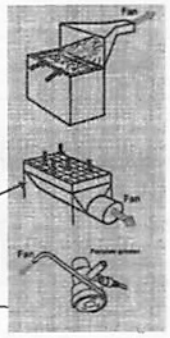
Engineering controls are design changes or physical devices that control a worker's exposure to a hazard.

Unguarded belt

Example: machine guarding controls

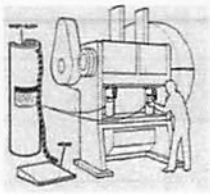
Guarded belt

Example: ventilation controls for chemicals



Equipment Lock-out

Locking out electrical equipment or moving parts of machinery helps prevent unexpected start up of machines and equipment during maintenance.



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Administrative Controls

- Develop new policies/procedures
- Revise work schedule
- Monitor
- Alarms, signals and warnings
- Buddy system
- Training

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Administrative Controls

Examples include limiting the amount of time a worker is exposed to a hazard, or limiting the number of workers exposed, or limiting exposure through specified work practices.

Do not create another or greater hazards

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Personal protective equipment

- Personal protective equipment (PPE) should be considered only after other control methods have been tried or shown not to be feasible.
- It requires the employee to understand the nature of the hazard and the limitations of the PPE.
- It also requires constant management to ensure the PPE is appropriate for the hazard, employees are properly trained to use the PPE correctly, and a supply of replacements is readily available.

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Combination of controls

In some cases, a combination of controls may be necessary to fully protect workers.

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Step by Step Procedure

- Describe the action
- Identify the hazard
- Describe the possible injury the hazard could cause
- Identify the safety precaution to prevent the injury

How Do I Do It?

- Break the job task into Steps
  - Watch the worker do the job and list each step in order
  - Begin each with a verb, for example", "go get the ladder."
  - Do not make too broad or too detailed
  - You may want to photograph or videotape
  - Review the steps with the worker and other workers who do the same job task to make sure you have not left anything out.

Identify the hazards of each step.

- For each hazard, ask?
  - What can go wrong?
  - What are the consequences?
  - How could it happen?
  - What are other contributing factors?
  - How likely is it that the hazard will occur?

Identify ways to eliminate or reduce the hazards

- Safer means to complete the task
- Describe each step
- Be specific not "be safe or careful"
- Changes in equipment
- Engineering controls
- Machine guards, lighting, ventilation
- Changes in work processes
- Administrative controls, how the task is done, if engineering controls not possible
- Rotate workers/tasks, changing the steps, training
- PPE (used as a last resort if engineering and/or administrative controls do not protect the worker)

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What do I do next?

- Correct the unsafe condition/process
  - Train employees who do the job the changes
  - Make sure they understand the changes
- Review the JHA/JSA
  - Periodically (you may have missed a hazard)
  - When the task changes
  - When injury or near miss occurs
- Use the JHA/JSA
  - Training
  - Accident investigation

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Tasks/jobs where injuries occur, or can occur		
How people get hurt	What causes them to get hurt?	What safe practices or PPE are needed?
Ladders tipping over	• Ladder was not on a level surface • Ladder was on soft ground and the leg sunk in • The person reached out too far • The ladder wasn't high enough to reach up safely – the person stood up near the top of it • Ladder broken or damaged	• Set ladder feet on solid level surfaces. • When reaching out, keep belt buckle between the side rails of the ladder. • Do not stand on the top of a stepladder or on the first step down from the top. • Replace or repair ladder
Lifting heavy objects	• Trying to lift too heavy objects • Bending over at the waist when lifting • Turning (twisting) back while lifting	• Use proper lifting practices (bend knees, don't twist) • For very heavy objects, use mechanical devices or get another person to help.
Slipping on the floor	• Spilled liquids not cleaned up • Small objects are dropped on the floor and left there • People wear the wrong type of shoes for conditions	• Wipe up all spills, and pick up dropped items, immediately. • Wear sturdy shoes with slip-resistant soles;
Using the bench grinder	• Flying particles get in eyes • If grinder wheel breaks, large chunks fly off at high speed • High noise level can injure hearing	• Wear safety glasses and earplugs when using grinder. • Keep tongue guards adjusted properly (see sticker on grinder for spacing).

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Changing a light bulb

Too Much Detail	Too Little Detail	Right Amount of Detail
Get ladder from storage. Get new light bulb from storage. Carry ladder and light bulb to light needing changing. Place ladder under light to be changed. Ensure light switch is in the off position. Climb ladder. Remove light cover. Twist light bulb in a counter clock-wise direction until it is free of the socket. Remove old light bulb. Insert new light bulb into socket. Turn in a clock-wise direction until tightened. Replace light cover. Descend ladder. Carry ladder back to storage.	Get a ladder and new light bulb. Change bulb. Put ladder away and throw out old light bulb.	Get ladder and new light bulb. Turn light switch off Place ladder under light to be changed. Using ladder, change bulb. Put ladder back in storage.

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EXAMPLE JSA

JOB SAFETY ANALYSIS	Job: Sharpening & Replacing a Rotary Mower Blade	Date: 1/17/2000
	Title of Person who does Job: Yard Worker	Supervisor: Pedro Jhonne
		Individual performing JSA: John Jhonne
Department:	Location: Outdoor Beautification	
Personal protective equipment:	Gloves & safety Glasses	

SEQUENCE OF BASIC JOB STEPS	POTENTIAL ACCIDENTS OR HAZARDS	RECOMMENDED SAFE JOB PROCEDURE
1. Disconnect spark plug wire. 2. Remove gasoline. 3. Invert mower. 4. Remove dull blade. 5. Check for bent blade. 6. Sharpen a balance dull blade. 7. Reassemble blade to mower. 8. Return mower to cutting position. 9. Reconnect spark plug wire. 10. Add gasoline. 11. Operate mower.	1. Striking against mowing deck hood 2. Skilled - Fire - Explosion 3. Caught between (2) moving gasoline components 4. Shuttles striking against blade. 5. None. 6. Cutting hand; striking against vise. 7. Striking against blade or mowing. 8. Overexertion. 9. None. 10. Fire. 11. Normal operating hazards.	1. Do not use excessive force. Allow mower to cool. 2. Ventilation. No smoking. Proper container. Flush away with water (if necessary). 3. Tip properly. Upper catcher chute up! Be sure cap is right. Lift properly. Use legs muscles. 4. Secure blunt blade - unsharp blade. Use gloves. Use proper size pocket wrench with extension. 5. None. 6. Wear gloves. Avoid contact with sharp blade. 7. Block blade. Wear gloves. Avoid contact with sharp blade. 8. Use leg muscles, not back. 9. None. 10. Ventilate. No smoking. Proper container. 11. Check for excessive vibration or unusual noise.

EMPLOYEES ASSISTING IN DEVELOPMENT OF JSA:

IF WORK CHANGES OR
1. Injury occurs, notify supervisor
2. Injury occurs, fill out Employee
3. Near miss occurs, report to supervisor
4. Supervisor reviews forms and investigates
5. Supervisor has changes made, authorized duty
to avoid

Let's fill one out!

- Involve your employees
  - ❑ They understand the job
  - ❑ They have the knowledge for finding hazards
  - ❑ You will get their "buy in"

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ANY QUESTIONS ??????

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Additional MOSH Services

- Consultation
  - 410-527-5678
- Voluntary Protection Program (VPP)
  - 410-527-5678
- Cooperative Compliance Partnership (CCP) 410-527-4499
- Training and Education
- Alliances
  - 410-527-2091

**Additional information on these services is included in your folder.

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MOSH On-Site Consultation

- Free on-site consultation
- Services are also available for public sector employers
- Identify hazards and how to correct
- Limited on-site education and training

For more info. Call (410)-527-5678

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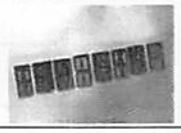
MOSH Training and Education

- Designed to help reduce occupational injuries and illnesses through education.
- Full and half day seminars FREE
- Videos, pamphlets, and brochures.
- For more info. Call (410)-527-2091



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Contact Us

General Information	(410) 527-4499
Report Fatality/Catastrophes	(888) 257-MOSH
Outreach-Training & Education	(410) 527-2091
Consultation	(410) 527-4472
Region 1 (Easton)	(410) 819-5860
Region 2 (Hunt Valley)	(410) 527-4442
Region 3 (Hunt Valley)	(410) 527-4426
Region 4 (Hagerstown)	(301) 791-4699
Region 5 (Hunt Valley)	(410) 527-4424
Region 00 (Hunt Valley)	(410) 527-2066

MOSH On The Web

Web Sites

www.dllr.state.md.us/labor/mosh.html

www.osha.gov

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Evaluations

Please be Honest with your evaluations we truly do look at and adjust our classes with your responses!

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Thank you

- Students
- Facility
- Others

Drive Safely!

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